

Instruction Manual

PC Playback and Communication Software
Digital Recorder Option
Model

DX-PC3 (ver.1.0.5)

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For Windows^R 98SE
For Windows^R 2000
For Windows^R Me

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1 Overview

The DX-PC3 is a Network and playback application software designed for use with Microsoft[®] Windows[®] 98SE, Windows 2000, and Windows Me. In combination with the Mitsubishi DX-TL1600 Series Digital Video Recorder and an Ethernet LAN, it can be used to acquire recorded images and live images captured with the DVR. Also, playback from SCSI devices are supported for both DX-TL1600U and DX-TL960U.

1.1 Product Features

- Recording date/time display
- Time search, alarm search, alarm list display
- Zoom display of still images
- Printing via Windows-compatible printers
- Zoom/scroll using Microsoft IntelliMouse[™]
- Bookmarking and Repeat AB Interval playback
- Audio playback (except some conditions)
- Camera switching capability
- Multi-screen display (4-camera, 9-camera, 16-camera display)
- Simultaneous recording and
- Live image acquisition

1.2 Operating Environment

- IBM PC/AT-compatible with Intel Pentium series or Intel Celeron series CPU (400MHz or faster)
- Microsoft Windows 98SE, Windows 2000, or Windows Me
- RAM: 128MB or more
- Display resolution: 800 pixels x 600 lines (minimum), 1024 pixels x 768 lines or more (recommended). Use a video card and monitor capable of displaying 32,000 or more colors.
- Free HD space: 200MB or more
- SCSI adapter : Adaptec AHA-2940 Series, SlimSCSI etc. compatible with WINASPI32 and SCSI-2 (when SCSI-connected peripheral devices are used) Under Windows 2000, WinASPI must be installed in advance for the playback of SCSI-connected devices. Please read the instruction manual for Adaptec SCSI board for the installation of WinASPI.
- Sound adapter : Windows-compatible type; SoundBlaster etc.
- Installed browser: MS Internet Explorer 4.01 Service Pack 1 or later
- Network interface card compatible with the environment described above

Note:

Operation is not guaranteed for all environments conforming to the above description.

1.3 Compatible Digital Recorders DX-TL1600Series

Note:

- When the Digital Recorder is in its communication mode operation via the recorder's front panel or its RS-232C terminal is not possible while the recorder is in this mode. (Please note this restriction when operating the recorder using its RS-232C interface.) The communication mode can be cancelled by pressing the disconnect. ("REMOTE" LED will be turned off.)
- If the DX-PC3 software cannot be exited normally (due to PC Lockup, interruption in the communication line, or other causes), the digital recorder will operate in the following way.
 1. The connection indicator stays illuminated for 3 minutes. During this time, the recorder cannot accept most operation commands or new communication requests.
 2. When the recorder is in the above state, a press of the COMMUNICATION button will turn off the connection indicator light, but the recorder will not accept any operation commands. You must wait 3minutes or press the rear panel "RESET"switch.

When the DVR's hardware is reset, the DVR's time and date will also be reset. Please re-enter the correct time and date after turning on the DVR. After this, connection to the DVR via the LAN connection can be done.

2 Installation

2.1 Installation Method

To install DX-PC3, first start up SETUP.EXE on the provided CD. Follow the series of instructions that appear on-screen, and the software will be installed automatically. The default directory for the installation is C:\Program Files\DX-PC3. For details on how to connect the digital recorder(s) to the PC, please refer to Section 12.2 (*Connection to Networks*).

2.2 Uninstalling DX-PC3

To uninstall DX-PC3, open the Install/Remove Applications dialog box in the Operation Panel and select DX-PC3 for removal. Alternatively, select the Uninstall DX-PC3 command from the Start menu, and follow the series of instructions that appear on-screen to complete the procedure.

2.3 Starting/Ending a Session

DX-PC3 is included on the Start menu following installation. To start a session, select DX-PC3 from the Start menu, and the windows shown in Figure 2.3 will appear on-screen.

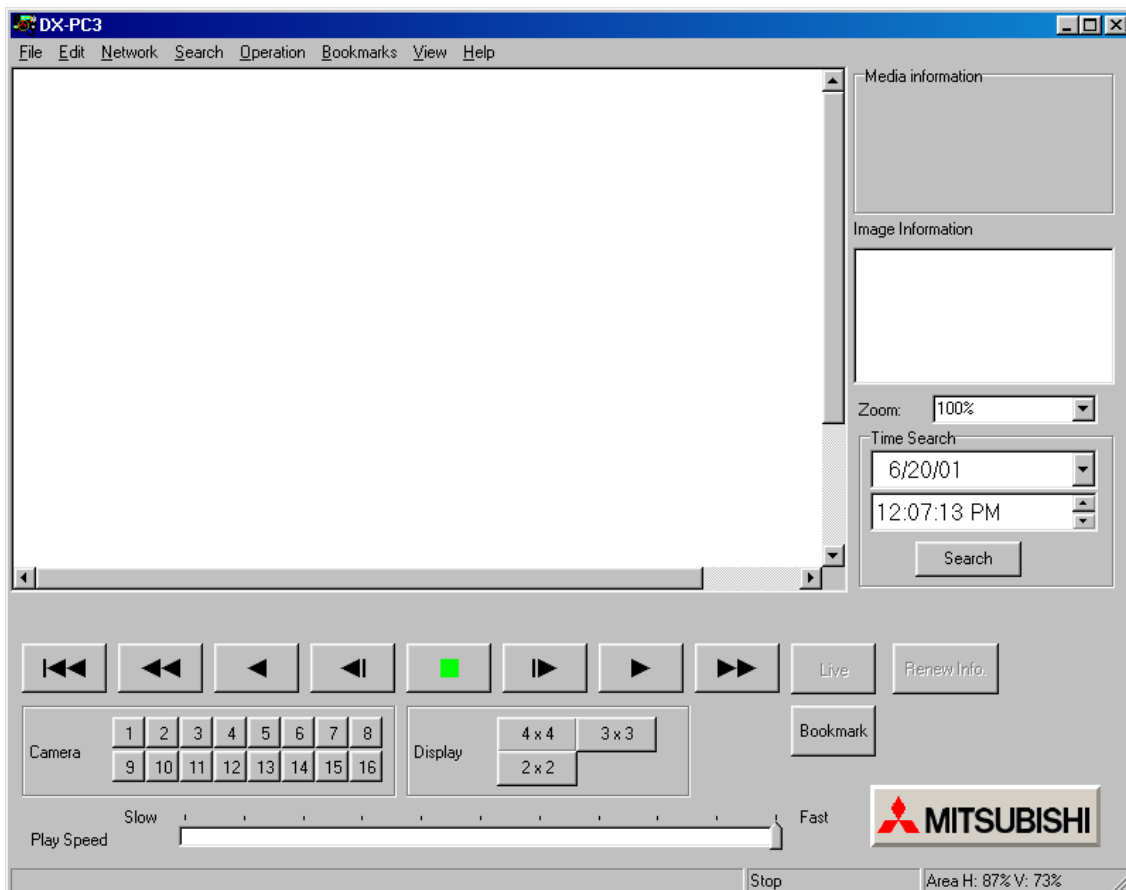


Figure 2.3 Main window

To end a session, go to the File menu and select Exit.

3 Main Window: Display & Operation

3.1 Main Image Field

The main image field, in its multi-screen display mode, is shown in Figure 3.1-1.

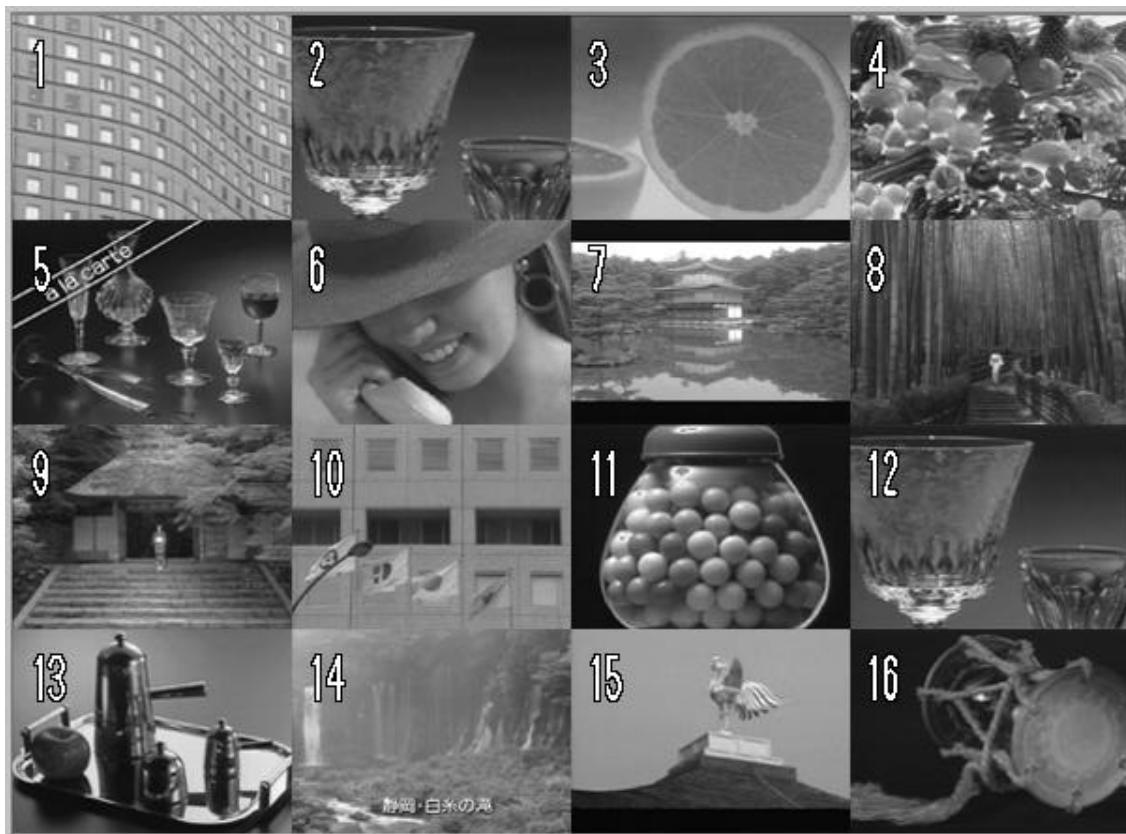


Figure 3.1-1

In the multi-screen display, the camera number changes from green to yellow to indicate the most recently updated field. By clicking the primary mouse button (“left clicking” in the standard setting) within any of the displayed image fields, the multi-screen display can be changed to a single-screen display. Alternatively, by clicking the secondary mouse button (“right clicking” in the standard setting) within any of the displayed fields, the following menu can be accessed (Figure 3.1-2).

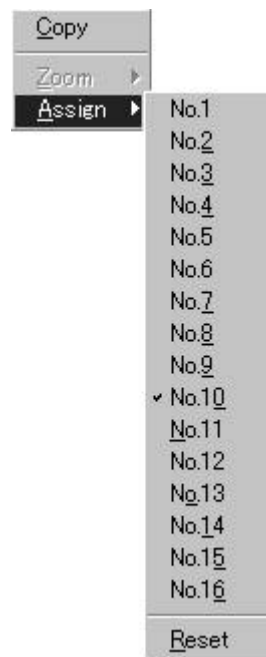


Figure 3.1-2

By selecting its number from the Assign list, any camera can be assigned to the field position you have selected. The assigned camera number gets saved in the registry, and will appear in that position at the start of the next session.

Note:

If the same camera number is assigned to more than one field in the display, these fields will be updated at the same time and will show identical images.

3.2 Operation Panel (Bottom)

The bottom portion of the Operation Panel is shown in Figure 3.2.

Position slider (*1)

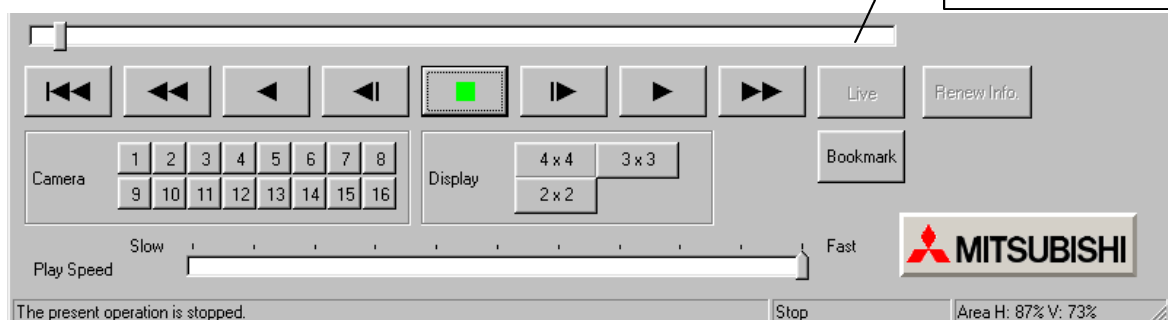


Figure 3.2 Operation Panel (bottom portion)

Each of the buttons appearing in the bottom portion of the Operation Panel has a different function as described below. The Renew Info function can also be accessed from the Network menu, and the other buttons can be accessed using commands found in the Operation menu.



Rewind (Jump to Starting Position)

Moves to the beginning of a recording segment on the current connected DVR



Reverse Search

Starts search playback in the reverse direction.

Search playback speed can be adjusted through repeated clicks of this button. (1X -> 2X -> 4X -> 8X -> 1X...)



Reverse Playback

Starts playback in the reverse direction. Also, starts skip reverse playback when Skip Playback has been selected in the Operation menu.



Field Reverse

Moves to the previous field and stops.



Stop

Stops playback. If the audio command is ON, audio playback continues after image playback has stopped. (Audio playback does not occur when Stop is used during playback in communication mode.)



Field Advance

Moves to the next field and stops.



Playback

Begins playback in the normal direction. Also, starts skip playback when Skip Playback has been selected in the Operation menu. This button is also used to activate the PC playback software feature.



Forward Search

Starts search playback in the normal direction.

Search playback speed can be adjusted through repeated clicks of this button. (1X -> 2X -> 4X -> 8X -> 1X...)

Live

Acquires the newest image from the operation camera during communication mode operation.

Renew Info

Acquires the newest information regarding alarm, camera operation and other factors during communication mode operation. (Information is automatically renewed approximately every 3 minutes even if this button is not pressed.)

Position slider

Appears when SCSI-connected devices are played back. (This slider does not appear when starting this software.) By dragging the mouse on the slider, the playback image is moved to the designated position of the medium. This slider is corresponding to the block number of the medium but not to the time.

1 – 16

Specifies a camera for single-camera display. For clicking multiple buttons, Press Ctrl and click on desired camera's number(s) (1 – 16) at same time. Clicking multiple buttons will initiate sequential display. During live communication (i.e., when acquiring new images via the communication mode), only active cameras can be selected; the buttons for inactive cameras will not respond. Buttons for cameras currently recording are displayed in red. Furthermore, display can be shifted to full-screen sequential display by canceling all selections.

2 x 2

Shifts display into 4-camera mode. Repeated clicks will cycle display as follows: 4a -> 4b -> 4c -> 4d -> 4a...

The initial settings for 4a – 4d are, from the top left field to the right: 1 – 4, 5 – 8, 9 – 12, 13 – 16.

3 x 3

Shifts display into 9-camera mode. Repeated clicks will cycle display as follows: 9a -> 9b -> 9a...

The initial settings for 9a – 9b are, from the top left field to the right: 1 – 9, 1 + 2 + 10 – 16.

4 x 4

Shifts display into 16-camera mode. The initial settings are, from the top left field to the bottom right: 1 – 16.

Bookmark

Activates the bookmark function

saving the image into the PC's memory. The image info is lost when PC is turned off.

Playback speed adjustment slider

By dragging the mouse on the slider underneath the buttons, playback speed can be increased up or decreased down. Using "Fast" (the default setting), images from each device will be renewed at the device's maximum speed. "Slow", on the other hand, adds roughly a 3-second wait to each frame shown at

maximum speed. The slider provides 100 adjustment steps between Fast and Slow.

(A playback speed is adjusted by changing the transfer rate in the operation of internal.)

The Operation Panel can be displayed or hidden using the Information Panel command in the View menu.

3.3 Information Panel (Right)

The left portion of the Information Panel is shown in Figure 3.3.

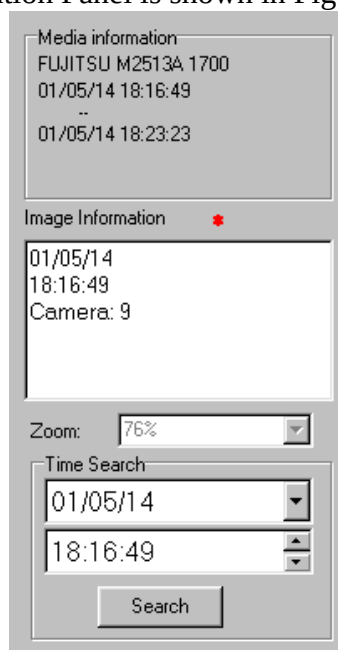


Figure 3.3 Information Panel (Right portion)

Media information

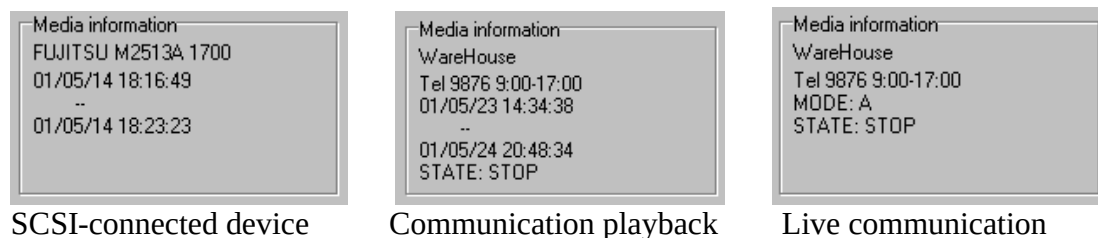


Figure 3.3.1 Media information

Media information

displays the connected-device name and the recorded time range of the medium in use. During communication playback, displayed information includes terminal name of the connected DVR, memo, and the range of recording times. If the connected device is in the middle of recording, the display will automatically be updated approximately every three minutes to reflect the continuous change in data. During live communication (i.e., the acquisition of the most current images through the communication mode), the DVR information displays the name of the connected DVR, memo, operation group, and status (recording/playback/stop/timer/alarm). Information is automatically updated (approximately) every three minutes, at which time image acquisition speed will drop momentarily.

Image information

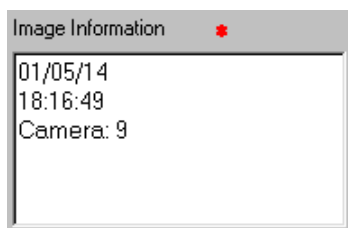


Figure 3.3.2 Image information

The date and time of image recording and camera number are displayed as shown in Figure 3.3.2. During split-screen display mode, information on the most recently updated camera image is displayed. This camera is marked in red on the main image field.

During live communication, only the camera number is displayed. In addition, a red * mark appears when a frame captured during alarm recording is displayed.

Zoom Combo box



Figure 3.3.3 Zoom Combo box

To activate the zoom function, single screen must be active. Zoom from 100 to 800 % is possible. For details regarding the Zoom Combo box, please refer to Section 10.3 (*Zoom Command*).

Time Search

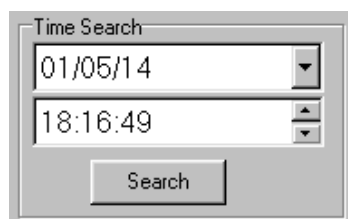


Figure 3.3.4 Time Search

Enter the desired date and time for your search in the text boxes, and click the Search button. Images will be displayed for the recordings made closest to the specified time. If no recorded images are available for the date specified, nothing will be displayed.

Note:

Depending on the type of font used, date and time information might not fit fully within the text box. In this case, go to the Windows Operation Panel, select Region, and set the format of the date/time display to [MM/dd/yy] and [HH:mm:ss].

The Information Panel can be displayed or hidden using the Information Panel command in the View menu.

3.4 Status Bar

The Status Bar displays explanations of the selected menu or button, and shows the current playback mode and the current display range.

Please refer to Section 3.6 (*Hint Display*) for further details



Figure 3.4 Status Bar

The Status Bar can be displayed or hidden using the Status Bar command in the View menu.

3.5 Shortcuts Menu

By clicking the secondary mouse button (“right clicking” in the standard setting) anywhere within the image, the following Shortcuts menu can be accessed (Figure 3.6).

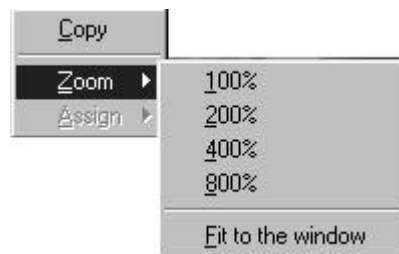


Figure 3.6 Shortcuts menu

For details on each of the menu commands, please refer to Section 5.1 (*Copy Command*) and 10.3 (*Zoom Command*).

3.6 Hint Display

Placing the mouse pointer over the on-screen button will make two things appear: an explanation in the Status Bar and a hint balloon near the pointer.

4 File Menu



Figure 4 File menu

4.1 Media... Command

Clicking the Media... command in the File menu opens the following dialog box (Figure 4.1), which allows to select the media. (This function works during playback of SCSI-connected device only.)

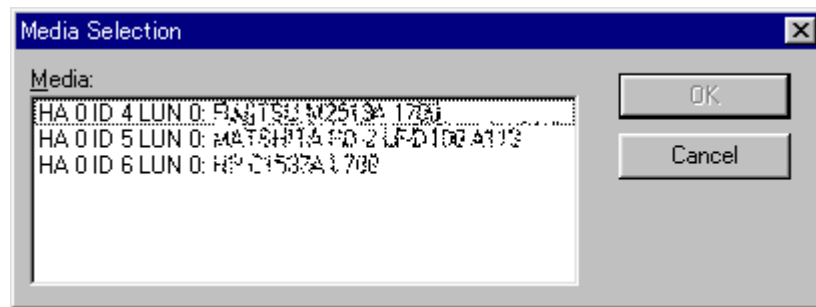


Figure 4.1 Media...dialog box

The following information is displayed in this box. The bender ID and the revision can be acquired by sending the SCSI INQUIRY command.

HA	HostAdapter No.
ID	SCSI ID
LUN	LUN No.
VenderID	
Revision	

4.2 Save As... Command

Clicking the Save As... command in the File menu opens the following dialog box (Figure 4.2), which allows the currently displayed image to be saved as either a Windows bitmap file (.bmp) or an JPEG file (.jpg).



Figure 4.2 Save As... dialog box

When saving an image in Windows bitmap format, the recording time and comments for that image get saved in an accompanying text file (.txt) of the same name. When saving an image as an JPEG file, the image gets saved as a JPEG file (.jpg) the same name. Comments are included within the HTML file using the following format.

Format	Comment
Line 1: DX-PC3 version	Mitsubishi DX-PC3
Line 2: Recording date/time, frame number	01-23-01 12:34:56'01
Line 3: Camera #, alarm (A), alarm start (S)	Camera: 2 ,AS
Line 4: Comment	(COMMENT)

4.3 Print Command

Clicking the Print command

in the File menu opens the following window (Figure 4.3). After making desired adjustments to Margin, Printer settings..., and other options, click the Print button to create a printout of the image.

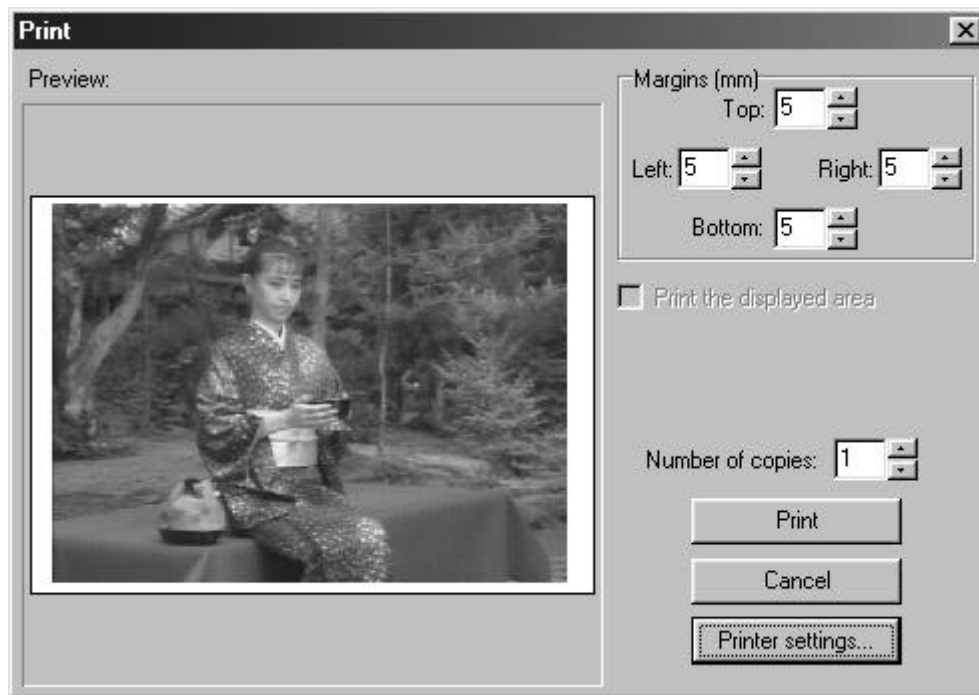


Figure 4.3 Print window

The Preview column shows what the printout will look like. Desired margin values (in millimeters) can be entered in each of the Margin text boxes. By adding a check mark to the “Print the displayed area” selection, only the portion of the image visible in the main window will be printed.



The quantity of printouts to be made can be specified in the Copies box. This function is not available, however, with printers that do not support printing of multiple copies.

Clicking the Printer Settings button opens the standard Windows Printer Settings dialog box, which allows selection of the printer, paper type, page orientation, and other items.

Various elements are included in the printout. Date and time are printed in the margin above the image. Mitsubishi DX-PC3, the name of the recorder used (e.g., DX-TL1600 Series), and the printing proportions (in portrait or landscape orientation) are printed in the margin below the image.

5 Edit Menu

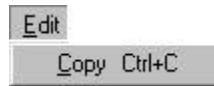


Figure 5 Edit menu

5.1 Copy Command

The currently displayed image can be copied to the clipboard by using the Copy command in the Edit menu.

6 Network Menu (DX-TL1600 only)

Remote control of the recorder(s) is possible using the DX-PC3 communication functions. For details on a general method of connection, please refer to Section 12.2 (*Connection to Networks*).



Figure 6 Network menu

6.1 Connect Command

The Connect command in the Network menu allows you to establish a connection to the recorder selected in the Recorder list window. This command does not work if the Recorder list window is not displayed.

Note:

If connection to a recorder that has not yet started recording is attempted, operation will halt in the middle of data acquisition. Before making a connection, please be sure to confirm that the recorder contains some recorded data.

6.2 Disconnect Command

Connection to a recorder can be terminated using the Disconnect command in the Network menu. This command does not work when there is no active connection to a recorder.

6.3 Add recorder... Command

Clicking the Add recorder... command on the Network menu opens the Recorder list window (Figures 6.3, 6.3.1, and 6.4). Using this window, you can add or remove recorders as well as edit saved settings. DX-PC3 allows registry of up to 100 terminals. Starting with the next session, the Recorder list window will automatically be displayed when a registered recorder is present.

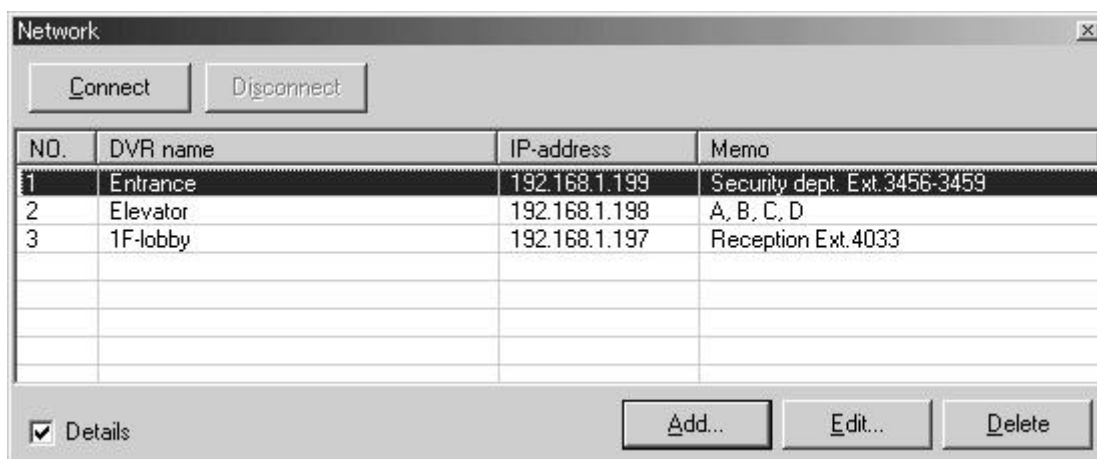


Figure 6.3 Recorder list window (full)

By using the mouse to drag the partition lines, each column on the list (DVR name, IP address, memo) can be widened to display more characters.

6.3.1 Register/Add commands

Clicking the Add button on the Recorder list window opens the following dialog box (Figure 6.3.1). New recorders can be registered and added to the list by entering information in each of the fields.

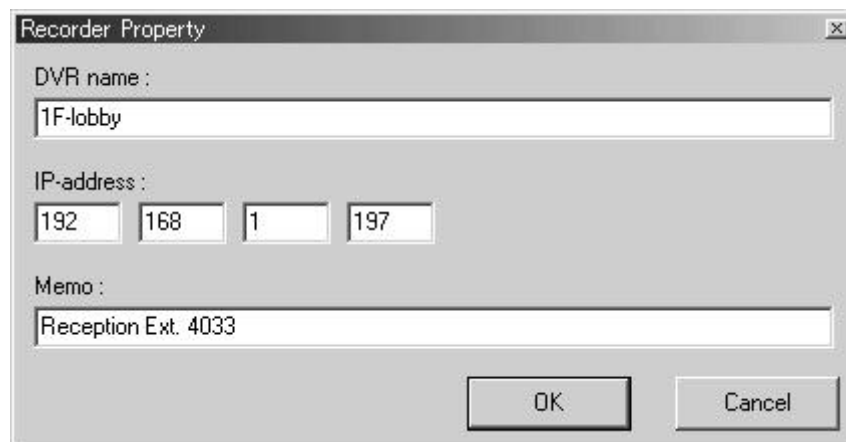


Figure 6.3.1 Recorder Property box

DVR name: field

The recorder to be registered can be given an easily recognizable terminal name. In the abbreviated Recorder list window, this is the only field that is displayed. Up to 40 characters can be entered, although the default display will only show up to 30 characters. (This field is not a mandatory setting.)

IP-address: field

The IP address of the recorder to be registered is entered in this field. As DX-PC3 uses this information to establish connections with recorders, it must be entered correctly to ensure normal operation. In addition, duplicate IP addresses will not be accepted.

Memo: field

Comments for the recorder to be registered can be entered in this field. Up to 40 characters can be entered, although the default display will only show up to 30 characters. (This field is not a mandatory setting.)

OK button

Enters the information of the above fields in the Registered Terminals list.

Cancel button

Cancels the operation of registering/adding a terminal.

6.3.2 Connect/Disconnect commands

Connections to registered recorders can be made using the Recorder list window (Figures 6.3 and 6.4). Connections to recorders that are currently recording can also be made.

Connect button

Please refer to Section 6.4 (Recorder list Command).

Disconnect button

Please refer to Section 6.4 (Recorder list Command).

Details checkbox

Removing the check from this box hides the IP address and memo columns, converting the Recorder list window to its abbreviated version (Figure 6.4). In the abbreviated window, the Add, Edit, and Delete buttons are also not included.

6.3.3 Edit/Delete commands

Saved settings can be edited and registered recorders can be removed via the Recorder list window (detailed version, Figure 6.3).

Edit button

Click a selected recorder on the list to access that recorder's Property box and change its information. These changes will be reflected in the Recorder list when the OK button is clicked. Using the Cancel button will erase the changes made in the Property box, and these alterations will not be put into effect.

Delete button

Clicking this button will cause the following confirmation message to appear (Figure 6.3.3). To delete a recorder's registered information, proceed by clicking OK. Alternatively, using the Cancel button will remove the confirmation message, and registered information will not be altered.

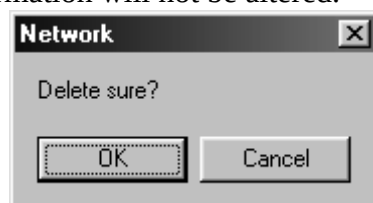


Figure 6.3.3

6.4 Recorder list... Command

Clicking the Recorder list... command in the Network menu will open the Recorder list window (Figures 6.3 and 6.4). Starting with the next session, the Recorder list window will automatically be displayed when a registered recorder is present.

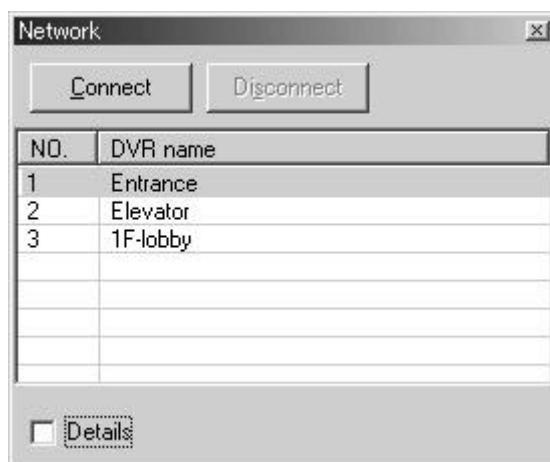


Figure 6.4 Recorder list window (abbreviated)

Connect button

Connection to a selected recorder (indicated on the list through inverted coloring) can be established by clicking this button. If, while connected, this button is used again to select a different recorder, connection to a second recorder will be made. In this case, connection to the first unit will be terminated. Multiple computers cannot connect to the same recorder at the same time.

Disconnect button

Clicking this button will terminate the connection to the recorder currently in communication with the PC. This function does not work when there is no connected recorder present.

Details checkbox

Adding a check to this box will open the full version of the Recorder list window, which includes the IP address and memo columns (Figure 6.3).

6.5 Renew info Command

The latest recorder information can be acquired using the Renew info command in the Network menu. Information is automatically updated (approximately) every 3 minutes even if this command is not selected.

Note:

Automatic Disconnect function

The networking feature will activate its Automatic Disconnect function 30 minutes after a connection to a recorder has been established, and a message box will be appear on-screen (Figure 6.5.1).

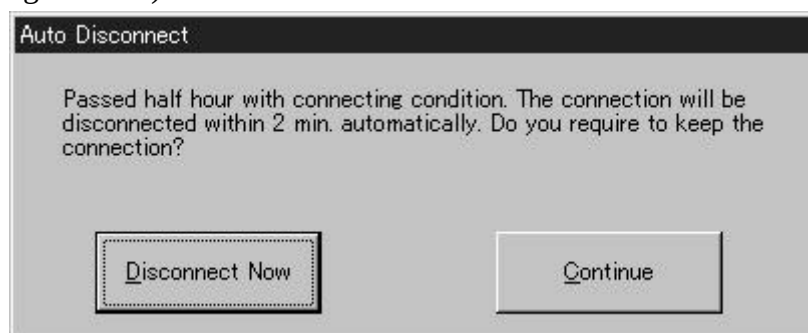


Figure 6.5.1

If the Disconnect Now button is selected, the connection will be terminated after two minutes and the following message will be displayed (Figure 6.5.2).



Figure 6.5.2

If the Continue button is selected, the connection will be sustained for another 30 minutes.

7 Search Menu

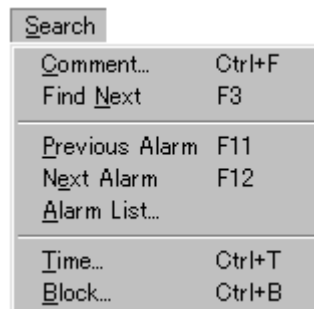


Figure 7 Search menu

7.1 Comment.../Find Next Commands

Clicking the Comment... command in the Search menu opens the following window (Figure 7.1). Searches can be made for a frame recorded with the specific comment by entering the text into the box and clicking the Find Next button. The image is then displayed if it is found. If the Up command of Direction is selected, the search will be made towards earlier recorded times. The Down command performs a similar function through later recording times.

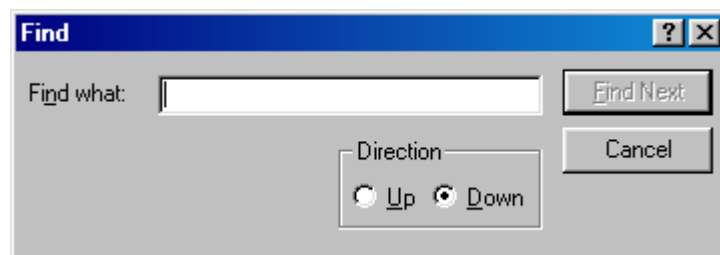


Figure 7.1 Find window

Clicking the Find Next in the Search menu starts the search of the comment which is designated in Comment... command. This function does not work during the communication mode.

7.2 Previous Alarm/Next Alarm Commands

The Previous Alarm command in the Search menu starts a search for Alarm Recordings through earlier recorded times, and displays the field if any are detected. The Next Alarm command performs a similar function through later recording times.

7.3 Alarm List... Command

Clicking the Alarm List... command on the Search menu opens the following window (Figure 7.3).

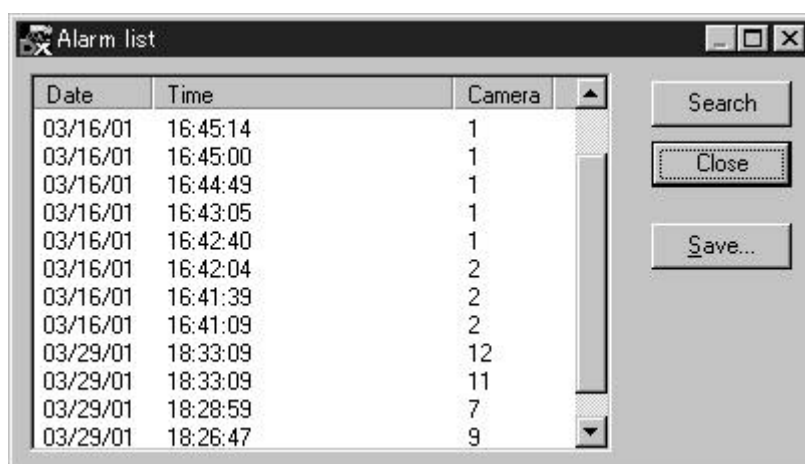


Figure 7.3 Alarm List window

Display can be moved to a desired alarm position by selecting the alarm time from the list box and clicking the Search button. A tab-sectioned text file of the alarm list can be made by clicking the Save... button.

7.4 Time... Command

Clicking the Time... command in the Search menu opens the following window (Figure 7.4).

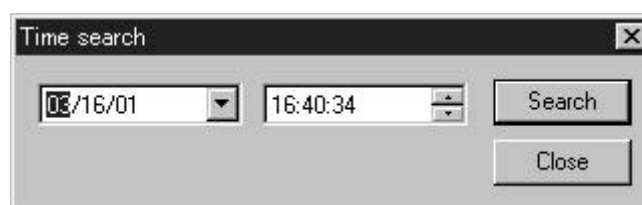


Figure 7.4 Time Search

Searches can be made for a frame recorded at a specific time by entering the date and time in their respective text boxes and clicking the Search button. The image is then displayed if it is found.

7.5 Block... Command

Clicking the Block... command in the Search menu opens the following window (Figure 7.5). Searches can be made by selecting the desired block from the list box and clicking the Search button. This function does not work during the communication mode.

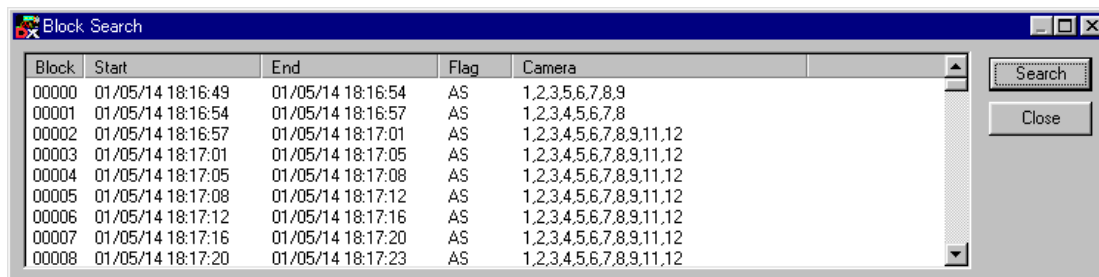


Figure 7.5 Block Search

Note:

When accessing from peripheral devices with large amount of recording blocks such as DDS-2 or DDS-3 to a PC with a slow CPU or a small amount of on-board memory, it may take a long time to open the Block search window.

The list box contains the block number, its recording start time, its recording end time, the flag, and the camera number. The following table indicates symbols used in the flag field and their meanings.

Flag	Meaning
A	Contains an alarm-recorded frame
S	Contains an alarm-recording start frame
C	Contains a comment-recorded frame
T	Contains a shot-recording frame

8 Operation Menu



Figure 8 Operation menu

For details regarding the Operation, please refer to Section 3.2 (*Operation panel*) .

8.1 Eject Command

Clicking the Eject command in the Operation menu Ejects the media from SCSI device

8.2 Skip mode Command

Adding a check mark to the Skip Mode command in the Operation menu will open the following window on-screen.(Figure 8.2) This feature comes in very handy when playing back a medium used for a recorder without multiplexer functions.

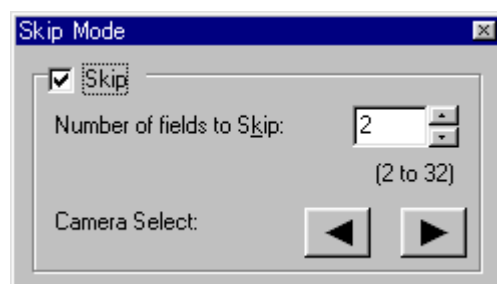


Figure 8.2 Skip mode window

Adding a check to the Skip Mode checkbox allows the recorder to start skip playback at the designated interval.

In the Number of Field to Skip, the number of cameras used for recording in the medium can be set.

Clicking  or  button of Camera Select will switch the images to the designated camera during playback.

This function can be used only when active cameras are fixed through the multiplexer. Set Number of Field in SCSI of the Options dialog box (See Section 10.4) to an integral multiple of the number of cameras when using forward or reverse search function.

9 Bookmarks Menu

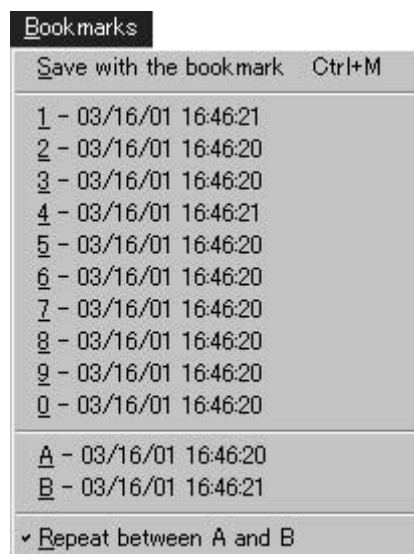


Figure 9 Bookmarks menu

9.1 Marking using bookmark Command

Current playback position can be registered on the bookmarks list by using the save with bookmark command in the Bookmarks menu. Up to 30 bookmarks can be registered. When this limit is exceeded, bookmarks will be erased starting with the oldest bookmark. All bookmarks are erased when the DX-PC3 session is ended. This command has the same function as the Bookmark button on the Operation Panel.

9.2 Bookmarks quick search Command

Marked bookmarks image can be transferred selecting the Bookmarks list(1-30) in the Bookmarks menu.

9.3 Bookmarks A, B Command

Using the Bookmarks A, B command in the Bookmarks menu, the current position can be stored as either the A-point or B-point for the Repeat between A and B function.

9.4 Repeat between A and B Command

By adding a check mark to the Repeat between A and B command in the Bookmarks menu, repeat playback will be performed from the specified A-point to the specified B-point when pressing Playback button.

10 View Menu

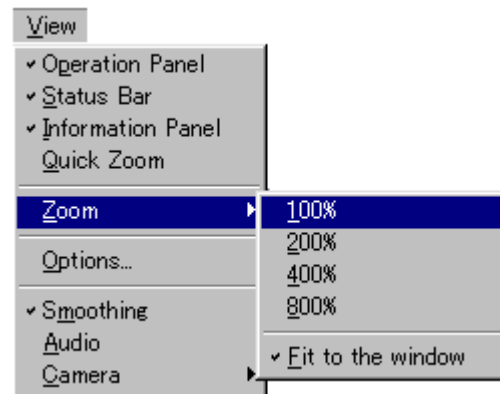


Figure 10 View menu

10.1 Operation Panel/Status Bar/Information Panel Commands

The Operation Panel can be displayed or hidden using the Operation Panel command in the View menu. In the same manner, the Status Bar and the Information Panel can also be displayed or hidden using their respective commands in the View menu. These settings will be saved in the registry.

10.2 Quick Zoom Command

The Quick Zoom window can be displayed or hidden using the Quick Zoom command in the View menu. This setting will be saved in the registry.

10.3 Zoom Command

Clicking the Zoom command in the View menu brings up a submenu with a list of selectable display magnifications (100%, 200%, 400%, 800%). You can also have images automatically adjusted to fit the size of the window by adding a check mark to the Fit-to-window command. These settings will be saved in the registry.

10.4 Options... Command

The following dialog box (Figure 10.4) can be accessed through the Options... command in the View menu.

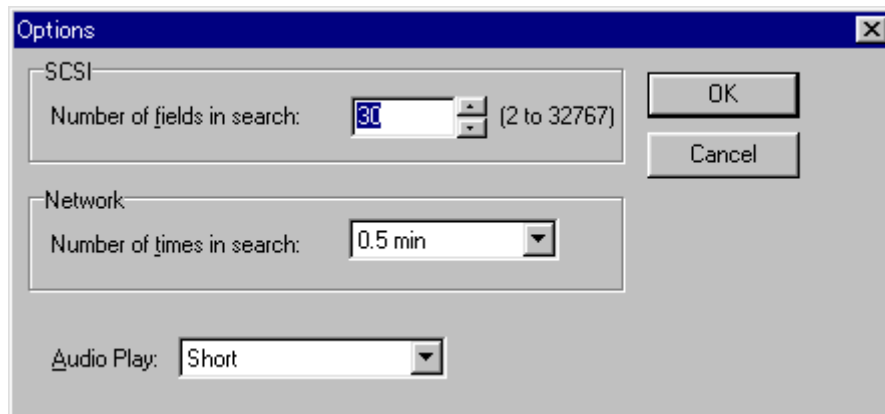


Figure 10.4 Option dialog box

SCSI---Number of fields in search:

Sets the base speed for search playback with devices in SCSI connection mode. Selections from 2 to 32767 fields.

Network---Number of times in search:

Sets the base speed for search playback with devices in communication mode. Selections include 0.5 min., 1 min., 15 min., 1 hr., 4 hr., and 24 hr.

Audio Play:

Sets the audio play. Selection include Short, Middle, Long.

OK button:

Click to save settings in the registry.

10.5 Smoothing Command

Smooth display of the stopped image can be obtained by adding a check mark to the Smoothing command in the View menu. This setting will be saved in the registry.

10.6 Audio Command

Adding a check mark to the Audio command in the View menu outputs the audio when playing back the audio-recorded medium. Stopping the image playback starts the audio for several seconds before and after the stopped frame.

3 levels of audio settings (short/middle/long) are available.

Note:

The audio playback period will vary depending on the recording settings (recording interval/recording image quality) etc. of the medium.

10.7 Camera Command

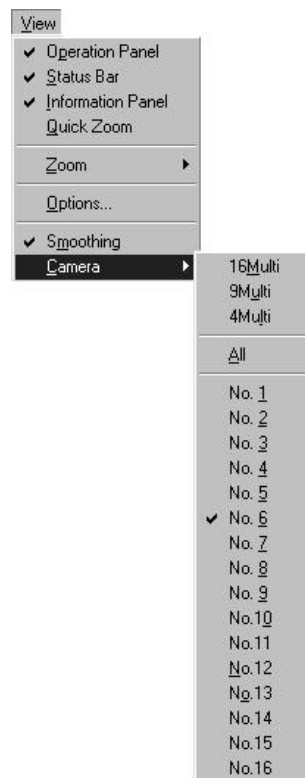


Figure 10.7 Camera commands

When performing media playback from a unit that has the multiplexer function, the Camera command in the View menu lets you select the playback camera.

- Selecting ALL initiates sequential playback of all cameras.
- Selecting any other option will add that camera to the group of cameras currently playing.

11 Help Menu



Figure 11 Help menu

11.1 Help Command

Help can be displayed by selecting the Help command in the Help menu.

11.2 About... Command

Information on the version of DX-PC3 being used can be accessed through the About... command in the Help menu.

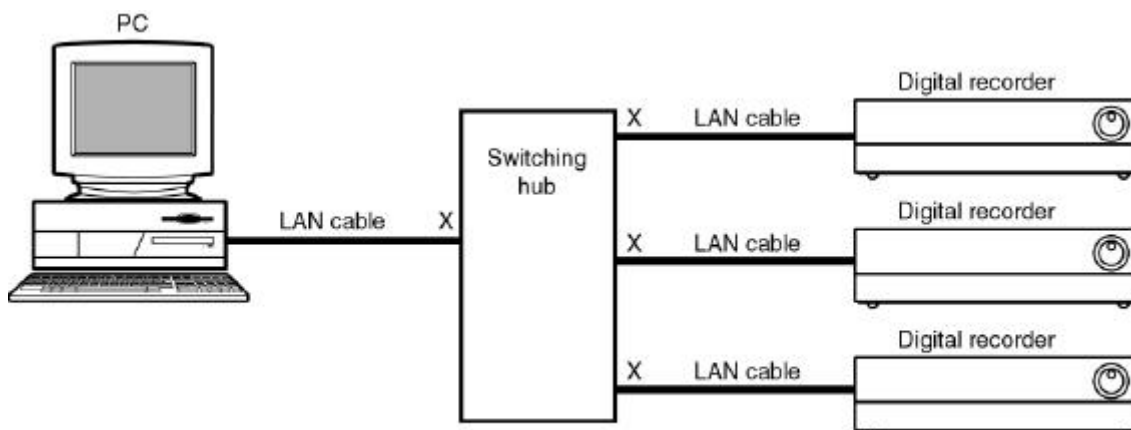
12 Appendices

12.1 Restrictions

- The playback speed of DX-PC3 is determined by the host computer's processing speed and the type of playback devices used. (When operating in communication mode, it will also be affected by the amount of network traffic and other factors.) For these reasons, there will be cases where the software's playback speed does not match the recording intervals of the digital recorder.
- Depending on the condition of the DVR recording (for example, if date and time information are in reversed order), there may be instances when playback, searches and other functions cannot be correctly performed.
- Depending on the printer or the printer driver used, there may be instances where images and/or text data do not get printout out correctly.
- DX-PC3 consumes a large amount of memory in order to display and update image data. Please avoid running other application programs while using DX-PC3.
- The DVR's Lock function is activated during communication mode, which halts use of the RS-232C terminal and other functions. To cancel the Lock function, disconnect the recorder's Communication function via the DX-PC3 disconnect function..
- The quality of the images displayed by DX-PC3 depends on the image quality settings used by the recorder at the time of recording. Other factors, however, will also affect quality when images are displayed at over 100% magnification.

12.2 Connection to Networks

12.2.1 Network connection method



* Please use a Category 5 LAN cable compatible with 10Base-T/100Base-TX.

The following diagram depicts a general method for connecting the recorder to a LAN.

Note:

The following two points need to be observed for LAN connection.

- Use a dedicated LAN.*
- Use a switching hub for the recorder-side connection.

* A dedicated LAN is a network comprised of DVR(s) and a PC only.

12.2.2 Settings for the LAN connection

The procedure is outlined below, with details of each step following the outline.

1. Set the IP address and subnet mask of the PC in which DX-PC3 is installed.
2. Set the IP address and the subnet masks of the digital recorder(s).
3. Connect the PC and the digital recorder(s) to the LAN.
4. Confirm LAN connection using the PING command.
5. Start up DX-PC3, then register and connect to the recorder(s).

Details of the procedure (for Windows 98SE)

1. Go to Start -> Settings -> Operation Panel -> Network. Select TCP/IP within the Network dialog box, then click the Property button. Next, select the "IP address" select "Specify an IP address" in the dialog box, and make the appropriate IP address and subnet mask settings.
 Example: IP address: 192.168.1.101 Subnet mask: 255.255.255.0
 Click OK to complete the settings, and exit the menu. Restart the system following the on-screen instructions.

Note:

IP addresses and subnet masks must be set correctly. Do not make (or alter) these settings if you do not have sufficient expertise on networks.

2. Turn the recorder's main power ON, and set the recorder's IP address and subnet mask. For detailed instructions on how to do this, please refer to the user's manual provided with the recorder. Factory default settings for the recorder are as follows:
 IP address: 192.168.1.100 Subnet mask: 255.255.255.0
 These strings can be used provided there are no duplicate settings within the same network.

Note:

The IP addresses 192.168.1.xxx (1 – 254) fall within the range of private IP addresses prescribed for RFC1918. Please use this range if it does not potentially cause any problems to do so.

3. As shown in the diagram above, use LAN cables and a switching hub to connect recorders to the network. If only one recorder is being connected to one PC, a cross cable can be used and the switching hub can be omitted.
4. Go to the Start menu and open MS-DOS Prompt. Enter ping_192.168.1.100 (the number string corresponding to the recorder's IP address), and press the Return key. Initiating the PING command will cause the recorder's Receive indicator and Transmit indicator to illuminate for a moment, and the following message will be displayed:
 Pinging 192.168.1.100 with 32 bytes of data:
 Reply from 192.168.1.100: bytes=32 time<10ms TTL=255
 :
 :

If the recorder is not correctly connected, a "time out" message such as the one below will appear. Please refer to the troubleshooting section (14.3.3) to check the connection.

 Pinging 192.168.1.100 with 32 bytes of data:
 request timed out.
 :
 :

5. Start up DX-PC3 and register the recorder in accordance with the steps specified in this user's manual.

12.2.3 Troubleshooting – Please refer to the following if problems occur during network connection procedures.

Please check each of the following items (a – h).

- a) Confirm that the cable is physically connected.
Check to see that the connection has not been made to the hub's cascade port. Recent connectors feature a guard that makes it difficult to insert them all the way into the recorder; check to see that the connector is all the way in.
- b) Check the IP addresses and the subnet masks of the PC and the recorder(s).
Check that the network address segments correctly match up. Confirm that the host address segments are unique. Confirm that settings are not identical to other network terminals or IP addresses.
- c) Confirm that the IP address entered using PING is correct.
Do not enter zero (e.g., 001). Be sure to enter a space between "ping" and the IP address.
- d) Change cables.
- e) Restart the PC and the recorder(s).
The switching hub address gets entered into memory as a result of the restarting process.
- f) Leave the connected units alone for a little while with their power ON.
Depending on the type of switching hub used, there are instances where the IP address of a new device is not recognized. Leave the units alone for an extended period of time (over 20 minutes), and check their condition after this.
- g) Replace the switching hub.
- h) Test the computer's Ethernet card.
Enter 127.0.0.1 in the PING utility and press the Return key. If a correct response is not returned (i.e., the device manager does not show "!" or "?"), check to see that the Ethernet card driver software is installed properly. Please remove the driver for the Ethernet card once, and then reinstall it.